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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 3

## Complete if Known

Application Number	10/782,953
Filing Date	February 23, 2004
First Named Inventor	Erik J. Shahoian
Art Unit	2673
Examiner Name	Unassigned
Attorney Docket Number	IMMR060/04US

## U.S. PATENT DOCUMENTS

Examiner	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number Kind Code <sup>2</sup> (if known)			
/MS/		6,448,977	9/10/2002	Braun et al.	
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		6,219,034	4/17/2001	Elbing et al.	
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		6,111,577	8/29/2000	Zilles et al.	
		5,890,582	11/25/1997	Ulrich et al.	
		5,575,761	11/19/1996	Hallanpour	
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		5,283,970	2/8/1994	Almer	
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		4,333,070	6/1/1982	Bames	
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/MS/		2,972,140	2/14/1961	Hirsch	

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)			
/MS/		JP	H2-185278		7/19/1990	Taito Corporation	
/MS/		JP	H4-8381		1/13/1992	Epoch Co. and Key- Planning Co.	
/MS/		JP	H7-24147		1/27/1995	Sega Corporation	
/MS/		JP	H5-192449		8/3/1993	Taito Corporation	

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## OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. 1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
/MS/		PATRICK, "Design, Construction, and Testing of a Fingertip Tactile Display for Interaction with Virtual and Remote Environments," <i>Master of Science Thesis</i> , MIT, Aug. 1990, archived Nov. 8, 1990.
		CALDER, "Design of A Force-Feedback Touch-Introducing Actuator For Teleoperator Robot Control," <i>Bachelor of Science Thesis</i> , MIT, May 1983, archived June 23, 1983.
		WIKER, "Teletouch Display Development: Phase 1 Report," <i>Technical Report 1230</i> , Naval Ocean Systems Center, San Diego, July 1988.
		BLISS, "Optical-to-Tactile Image Conversion for the Blind," <i>IEEE Transactions on Man-Machine Systems</i> , Vol. MMS-11, No. 1, March 1970.
		JOHNSON, "Shape-Memory Alloy Tactile Feedback Actuator," <i>Armstrong Aerospace Medical Research Laboratory, AAMRL-TR-90-039</i> , August, 1990.
		KONTARINIS et al., "Tactile Display of Vibratory Information in Teleoperation and Virtual Environments," <i>PRESENCE</i> , 4(4):387-402, Harvard Univ., 1995.
		AUKSTAKALNIS et al., "Silicon Mirage: The Art and Science of Virtual Reality," ISBN 0-938151-82-7, pp. 129-180, 1992.
		EBERHARDT et al., "Inducing Dynamic Haptic Perception by The Hand: System Description and Some Results," <i>DSC-Vol. 55-1, Dynamic Systems and Control: Volume 1</i> , ASME 1994.
		GOBEL et al., "Tactile Feedback Applied to Computer Mice," <i>International Journal of Human-Computer Interaction</i> , Vol. 7, No. 1, pp. 1-24, 1995.
		PIMENTEL et al., "Virtual Reality: through the new looking glass," 2 <sup>nd</sup> Edition; McGraw-Hill, ISBN 0-07-050167-X, pp. 41-202, 1994.
		"Cyberman Technical Specification," <i>Logitech Cyberman SWIFT Supplement to Logitech Mouse Technical Reference and Programming Guide</i> , 4/5/1994.
		OUHYOUNG et al., "The Development of A Low-Cost Force Feedback Joystick and Its Use in the Virtual Reality Environment," <i>Proceedings of the Third Pacific Conference on Computer Graphics and Applications, Pacific Graphics '95</i> , Seoul, Korea, 21-24 August 1995.
		<del>KOSIMAREK et al., "Tactile Display," <i>Virtual Environment Technologies</i>, Chap. 6, pp. 340-444.</del>
		LAKE, "Cyberman from Logitech," at <a href="http://www.ibiblio.org/GameBytes/issue21/greviews/cyberman.html">http://www.ibiblio.org/GameBytes/issue21/greviews/cyberman.html</a> , 1994.
/MS/		"Component Maintenance Manual With Illustrated Parts List, Coaxial Control Shaker Part No. C-25502," <i>Safe Flight Instrument Corporation</i> , Revised 28 January 2002 (3 pages).

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/MS/		"Technical Manual Overhaul Instructions With Parts Breakdown, Coaxial Control Shaker Part No. C-25502," Safe Flight Instrument Corporation, Revised 15 July 1980 (23 pages).
/MS/		SCANNELL, "Taking a Joystick Ride," <i>Computer Currents</i> , Boston Edition, Vol. 9, No. 11, November 1984
/MS/		YAMAKITA et al., "Tele-Virtual Reality of Dynamic Mechanical Model," <i>Proceedings of the 1992 IEEE/RSJ International Conference on Intelligent Robots and Systems</i> , Raleigh, NC, July 7-10, 1992
/MS/		NOLL, "Man-Machine Tactile," <i>SID Journal</i> , July/August 1972 Issue.
/MS/		ROSENBERG, "Virtual Fixtures: Perceptual Overlays Enhance Operator Performance In Telepresence Tasks," <i>Ph.D. Dissertation</i> , Stanford University, June 1994.

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/MS/		3,875,488	04-1975	Crocker et al.	
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		4,794,384	12-1988	Jackson	
		4,800,721	01-1989	Cemenska et al.	
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		5,354,162	10-1994	Burdea et al.	
/MS/		5,355,148	10-1994	Anderson	

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/MS/		5,381,080	01-1995	Schnell et al.	
		5,396,266	03-1995	Brimhall	
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		5,754,023	05-1998	Rosten et al.	
		5,755,577	05-1998	Gillio	
		5,757,358	05-1998	Osga	
		5,760,764	06-1998	Martelli	

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		5,771,037	06-1998	Jackson	
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/MS/		EP	875819				
/MS/		WO	95/32459				
/MS/		WO	97/21160				
/MS/		WO	00/21071				
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/MS/		Adachi et al., "Sensory Evaluation of Virtual Haptic Push-Buttons," Technical Research Center, Suzuki Motor Corp., 1994.
		Adachi et al., Sensory Evaluation of Virtual Haptic Push-Buttons, 1994, Suzuki Motor Corp., pp. 1-7.
		Akamatsu et al., Multimodal Mouse: A Mouse-Type Device with Tactile and Force Display, 1994, Presence vol. 3, pp. 73-80.
		Atkinson et al., "Computing with Feeling," Comput. & Graphics, vol. 2, 1977, pp. 97-103.
		Batter et al., "Grove-1: A computer Display to the sense of Feel," Proc. IFIP Congress, 1971, pp. 759-763.
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Examiner Signature	/Mansour Said/	Date Considered	04/30/2008
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<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 5 of 5

**Complete if Known**

Application Number	10/782,953
Filing Date	February 23, 2004
First Named Inventor	Enk J. Shahoian
Art Unit	2673
Examiner Name	Unassigned
Attorney Docket Number	IMMR060/04US

**OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
/MS/		Millman et al., "Design of a 4 Degree of Freedom Force-Reflecting Manipulandum with a Specified Force/Torque Workspace," IEEE CH2969-4, 1991, pp. 1488-1493.
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/MS/		Yokokoji et al., "What you can see is what you can feel," IEEE 0-8186-7295-1, 1996, pp. 46-54.

Examiner Signature	/Mansour Said/	Date Considered	04/30/2008
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